# Department of Toxic Substances Control

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Winston H. Hickox
Agency Secretary
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Gray Davis
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**Memorandum**

Date: June 30, 2003
To: Chein Ping Kao, P.E., Project Manager
From: Eileen Hughes

**Hunters Point Shipyard, Parcel E: DTSC's Comments on Landfill Extent**

At your request, comments on the document: Parcel E Nonstandard Data Gaps Investigation, Landfill Lateral Extent Evaluation, Hunters Point Shipyard, San Francisco, California (Draft) are provided. The document, dated May 15, 2003, was prepared for the Department of the Navy, Southwest Division, Naval Facilities Engineering Command, San Diego, California (Navy) by Tetra Tech EM, Inc. The extent of the landfill cannot be fully evaluated until all supporting documentation including chemical analytical results is presented. Comments herein should be considered as preliminary.

**General Comments**

1. Landfill versus filled land, Section 3, Composition of Landfill Waste. There are intrinsic difficulties in distinguishing between landfill (which is designated as a yellow line on Figure 4 or as "waste" on cross sections) and filled land (which is designated on logs as "refuse" or as "fill" or as soil types with percentages of other constituents) based on visual observations only. This is especially true when the visible constituents of landfill and filled land are similar (e.g., wood, plastic, cloth, brick, paper, concrete, etc.). For the most part, it seems that the Navy has designated areas with higher percentages of visible constituents as landfill (i.e., "waste"). And, areas with lower percentages have been designated as not-landfill (i.e., as "refuse", or as "fill", or as soil types with percentages of other constituents). That is, the primary distinguishing characteristic seems to be the percentage of constituents. This fact is not clearly explicated in the text.

2. Landfill extent. The extent of the landfill has not been fully determined, as detailed in **Specific Comments** below.

3. Title. The title of the document indicates that the lateral (horizontal) extent of the landfill is the subject of the evaluation. It is not clear why the title is limited to lateral extent only when an interpretation of the vertical extent is presented on cross sections in the document. The phrase "lateral" should be deleted from the title and the text revised as needed.

4. Criteria. The criteria used to determine landfill extent are not sufficient.
   Chemical analytical results should be included as criteria for determining the extent of the landfill. A summary of results for 51 samples from test pits and 4 samples from soil borings (samples which were collected specifically for this investigation) should be included, along with QA/QC evaluation and laboratory reports. An evaluation of all chemical findings should be provided in the text. Figures showing chemical analytical results should be provided: all data above risk-based levels should be shown on figures. Please include and discuss all pertinent chemical analytical results, including RI results.
   Petroleum contaminated soil and stained soil should also be included as indicators of landfill extent.
   Contaminant odors and high field readings of volatile organic compounds (VOCs) and other landfill gases may also be relevant.
   Observations made during trenching for installation of the Gund Curtain are also pertinent to the delineation of the landfill (along the northern perimeter and a portion of the western perimeter) and should be summarized here. This trench was essentially a very long test pit. Please indicate areas of refuse, petroleum contamination, and stained soil. Chemical analytical results for waste disposal are also pertinent.

5. Supporting data. The extent of the landfill is not fully supported by the data presented in the document. Please include all supporting documentation. For example, include all logs (e.g., cone penetrometer test (CPT) results, standard penetration test (SPT) results, and remedial investigation (RI) logs) which were used to delineate the horizontal extent on Figure 4 and to develop cross sections.
   For these comments, temporary soil gas probe (SG) and gas monitoring probe (GMP) logs were reviewed: these logs were presented in Parcel E Nonstandard Data Gaps Investigation, Landfill Gas Characterization, dated May 15, 2003. Due to time and resource constraints, RI data was not researched and reviewed.

6. Characterization of landfill "Waste". It is noted that "Waste" throughout most of the landfill has not been fully characterized.

**Specific Comments**

1. Landfill extent. These comments are preliminary, pending review of chemical analytical results and other supporting data. Comments generally refer to Figure 4.
   a. Northern Perimeter
      The right angle (between temporary soil gas probes SG24 and SG25) is not supported. Wood debris and petroleum staining in TPBWE01 at depths greater than the nearby test pits and SGs suggest that the landfill may extent to the west beyond the limits shown.
      The text says that "no waste was found in test pit WE01" but the log notes "trash" and "greenish color" and photograph 6 notes "stained soil and debris in test pit WE01".
      The text says that boring TPBWE01 "is considered the northern extent of the landfill" but the log notes "wood debris" at 6.5 fbgs and petroleum staining from 17 to 21.5 fbgs.
      Landfill waste may be indicated at SG03A ("wood fragments") and SG03B (poor

recovery due to debris").
WE11 and TPBWE11 are shown as northern limits, with no stepouts to the north. But the logs show rubble, wood, and paper in WE11. And, petroleum staining from 9.5 to 24.5 fbgs and trace wood fragments are noted in TPBWE11.
The right angle to the west of WE11 is not supported.
Why isn't the line drawn from SG07 to SG08A?
More data points may be needed to delineate between SG08A and SG08. The extent of "blackish soil" in SG08 is not detemined and may warrant further investigation, since this was a sandblast grit disposal area.
Errors. The log is titled "TPBWE05" but Figure 2 shows the location as "TPBWE05-2". And, the log says "TPBWE 06", but Figure 2 says "TPBWE06A". Similarly, should "WE05" on Figure 2 be changed to "WE05-1"?

b. Eastern Perimeter
The eastern perimeter is not well defined and is controlled by one location (IR01B021) along 800 feet.
At the southernmost reach of the eastern boundary as depicted, TPBWE25 is shown outside the landfill, but black staining and petroleum odor was noted on the log. Although VOCs were measured (e.g., 229.8 ppm in SG11), no other contaminant indicators were noted on logs for SG09 to SG15. These may represent the outermost limit of the landfill based on information provided in this report (and not taking into account other supporting data).

c. Southern Perimeter
It seems that the Navy has used the shoreline and topographic contours as criteria along the southern perimeter: however, this fact has not been clearly explicated in the text.
Extent not determined from WE17F to TPBWE25 on the southern perimeter: no stepouts to the south: Landfill extends at least to depths of 16 fbgs at these locations. Stepouts should extend at least to these depths.
Extent not determined from SG19 to TPBWE24: no description was provided for WE16 except at 1 fbgs, no other data is provided between these two points, and there are no stepouts to the south.
The log for WE15 says no detections and no debris but also notes chlorine and hydrogen sulphide. How were these two gases detected? What were the concentrations?
"sand saturated with petroleum" at 15.5 to 17 fbgs and "wood debris with petroleum staining to 20 fbgs was noted at TPBWE14. Stepouts to the south must extend at least to these depths.
The "z" curve between TPBWE14 and WE22 is not supported. Also, there are no data points south of the line.
Extent not determined at WE22: no description was provided except at 1 fbgs, no stepouts to the south.

d. Western Perimeter
The line should include "stained soils" at WE20B.
Debris was noted at 6 fbgs in SG21A but nearest pit (WE18D) was dug only to 3 fbgs and nearest SG (SG20) had a total depth of 4 fbgs. Extent at depth is not determined.

The farthest southwestern extent has not been determined, but should include "dark stained" soils at SG19.

2. Cross Sections. DTSC agrees with USEPA's comments on cross sections. Additional comments may be provided by DTSC when supporting information is provided.

3. Test pit logs (Appendix A). The text refers to variations of the contents of the pits along the length of the pit. For example (page 8): "Both test pits WE02B and WE04B contained a small layer of landfill waste that stopped 3 to 4 feet from the fence". Similar statements, about waste stopping a few feet from the fence, are made for WE07B, WE03B. However, such information is not provided on the test pit logs. Where is such information documented? All pertinent information should be on the field logs.
Descriptions are not provided for the full depths of the logs at some locations. For examples, see Southern Perimeter above.

4. Field measurements for VOCs and methane
Filed measurements were not reported on all logs for all ground penetrations (e.g., GMPs) and test pits. Given the site history and site contaminants—especially the existence of potentially explosive gases (e.g., methane) and toxic gases (e.g., chlorine), it is imperative that health and safety requirements be complied with. Please include all field measurements on logs, including non-detects ("NDs").
Were ambient readings and soil PID readings taken via sensors suspended on booms? Or, were the readings taken from soil subsamples (sealed in plastic bags)?
Note that the 5 ppm threshold cited is not necessarily conservative: that is, soils with significant levels of VOCs may not produce readings "consistently" above 5 ppm or at a "sustained positive reading" above 5 ppm.

5. Descriptions
The phrases "no odor" and "no staining" are used appropriately on boring logs.
The word "clean" is sometimes used to describe soil on test pit logs (e.g., "clean backfill"). How has it been determined that a material is "clean"? Since contamination is not always evident to the eye, the word "clean" should not be used without chemical analytical results demonstrating that contaminants have not been detected above risk-based levels.
"Inert" is also sometimes used to describe waste. What does inert mean? Are not soil, bricks, concrete, glass, etc. all inert? How is it relevant? Is there a relationship between inertness and contamination?

6. Figures
Figures in Appendix A should be drawn to scale and should represent the actual dimensions of the test pit. Presentation of identical figures for each pit is not very useful.
Figures 1, 2, and 4. UCSF property extends to the Hunters Point property boundary. Please revise figures and text accordingly.
Figure 4. Please include GMPs.

7. Appendix B, GMP construction logs. Amounts used (e.g., bentonite, annular seal, water) were not entered on all logs.

eh:hppelfextentcommentsf6/26/03

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June 26, 2003

Commanding Officer
Department of the Navy
Naval Facilities Engineering Command
Southwest Division
1220 Pacific Highway
San Diego, CA 92132-5190
Attention: Keith Forman

DRAFT PARCEL E NONSTANDARD DATA GAPS INVESTIGATION, LANDFILL LATERAL EXTENT, HUNTERS POINT SHIPYARD, SAN FRANCISCO, CALIFORNIA

Dear Mr. Forman:

California Department of Toxic Substance Control (DTSC) has reviewed the above-mentioned document dated 15, 2003. Attached please find our comments for your consideration.

If you have any question regarding this letter, please contact me at (510) 540-3822.

Sincerely,

Chein Ping Kao, P.E.
Senior Hazardous Substance Engineer
Office of Military Facilities

Enclosure (1)

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